Check List 8(6): 1310–1312, 2012
© 2012 Check List and Authors
ISSN 1809-127X (available at *www.checklist.org.br*)

Check List
Journal of species lists and distribution

NOTES ON GEOGRAPHIC DISTRIBUTION

Range extension of *Kinosternon dunni* Schmidt, 1947 (Reptilia, Testudines, Kinosternidae) in Chocó, Colombia

Luis E. Renteria-Moreno [1], German Forero-Medina [2,3*], Mario F. Garcés-Restrepo [4], John L. Carr [4,5] and José V. Rueda-Almonacid [6]

1 Universidad Tecnológica del Chocó, Departamento de Biología, Grupo de Herpetología. Ciudadela Universitaria, B/ Nicolás Medrano. A. A. 292. Quibdó, Chocó, Colombia.
2 Wildlife Conservation Society, Carrera 25 # 4 – 39, Cali, Colombia
3 Turtle Survival Alliance, Carrera 25 # 4 – 39, Cali, Colombia
4 Universidad del Valle, Faculty of Science, Department of Biology, Section of Zoology, Grupo de Investigación en Ecología Animal. Calle 13 No 100-00, Cali, Colombia.
5 University of Louisiana at Monroe, Department of Biology and Museum of Natural History, Monroe, Louisiana 71209-0520 USA.
6 Corporación Colombia en Hechos, Carrera 30 # 40A-71, Bogotá, Colombia.
* Corresponding author. E-mail: *forecroc@yahoo.com*

ABSTRACT: Dunns' mud turtle *Kinosternon dunni* is recognized only from a few localities in the drainages of the San Juan, Baudó and Docampadó Rivers in Chocó, Colombia. We report on the occurrence of the species in three new localities in a different drainage, two in the Atrato River drainage, which flows into the Caribbean Sea, and a third locality in the Gulf of Urabá, in the Colombian Caribbean. These new records extend the range of the species approximately 367 km to the north of the closest previous confirmed record.

The family of mud and musk turtles, Kinosternidae, is exclusive to the Americas (Iverson 1992). It contains two subfamilies (Kinosterninae and Staurotypinae), of which Kinosterninae is the largest and most varied (Iverson 1991), encompassing the genera *Sternotherus* and *Kinosternon*. Three species of mud turtles of the genus *Kinosternon* occur in South America: *K. scorpioides* Linnaeus, 1766, *K. leucostomum* Duméril and Bibron, 1851, and *K. dunni* Schmidt, 1947. The first two species have a wide distribution, occurring from Mexico to South America, while *K. dunni* has a small range and is endemic to the Pacific region of western Colombia (Medem 1961; 1962; Castaño-Mora 2004; Rueda-Almonacid *et al.* 2007).

The species was originally described based on two female specimens (No. 42804, No. 42803 Chicago Natural History Museum) from the type locality Pizarro, in the state of Chocó (Schmidt 1947). Since description in 1947 the species had been recorded in less than ten localities, all in the Departamento del Chocó (Medem 1961, 1962; Iverson 1992; Castaño-Mora 1997; Ceballos-Fonseca 2000; Castaño-Mora *et al.* 2004) (Figure 1). All of the confirmed localities are within the basins of the San Juan and Baudó Rivers. However, Medem (1961, 1962) had suggested that the species might be present in the Atrato River drainage and other localities north of the sites where he collected, based on information from the local people.

Dunn's mud turtle is considered vulnerable to extinction by the IUCN (2011) and by the national Red Book of Reptiles (Castaño-Mora and Medem 2002) because of its restricted range and consumption by humans (Medem 1961; Castaño-Mora 1997). Deforestation, illegal logging, and mining of the streams in the region also affect the species habitat (Castaño-Mora and Medem 2002). Despite these threats, the species remains one of the least known mud turtles (Iverson *et al.* in press). Here we report on three new localities that extend the distribution to a new drainage and 367.4 km to the north from the closest known location. Two localities correspond to individuals

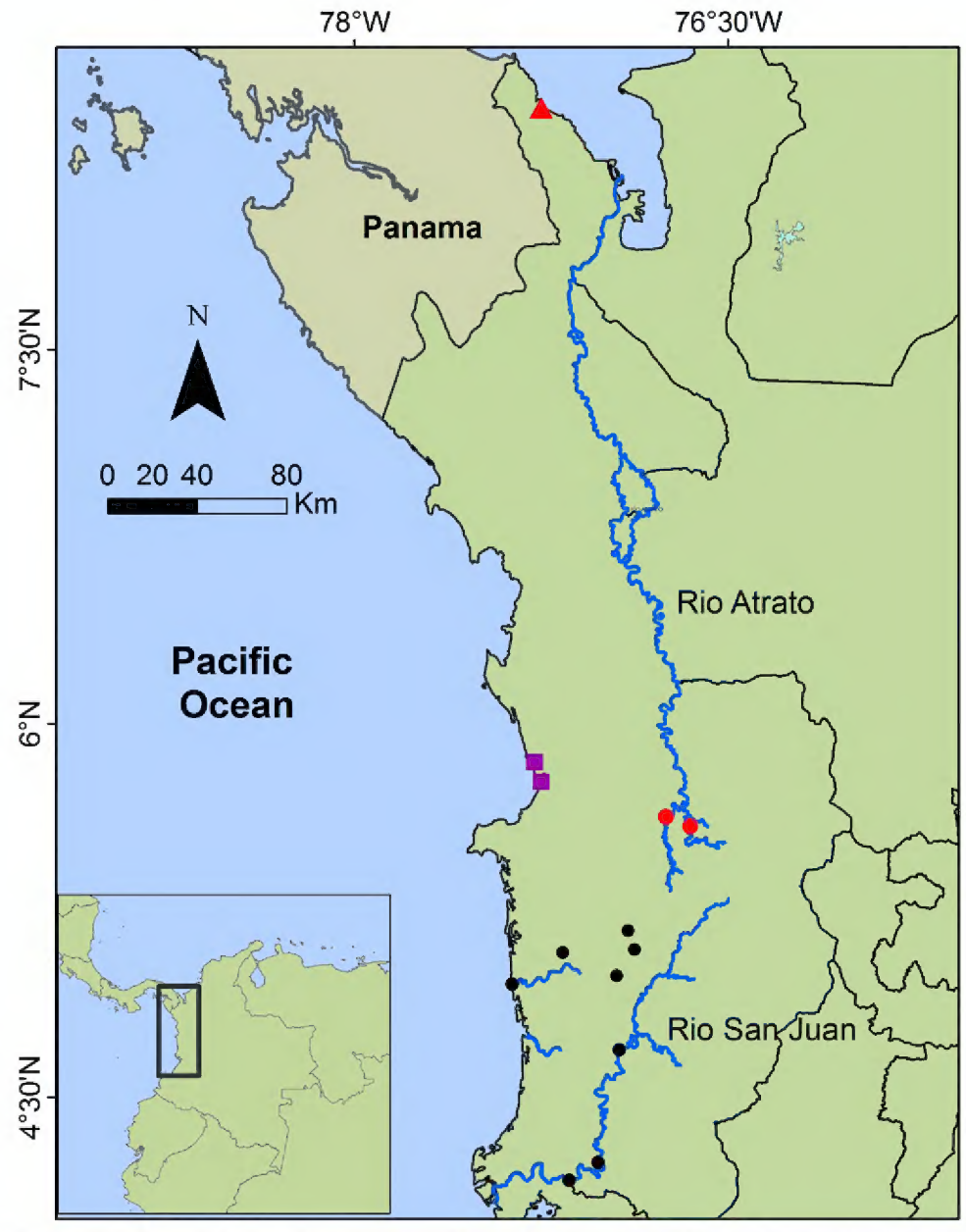

FIGURE 1. Records of *Kinosternon dunni* in western Colombia. Black dots represent confirmed records, purple squares represent suspected but unconfirmed records, red circles represent new records from the survey, and the red triangle corresponds with the new museum record.

captured during a field survey and the third locality to an individual deposited in a museum in Colombia that was previously identified as *K. leucostomum*.

From 9–18 July 2011 we conducted a survey to determine the presence of *K. dunni* in the Atrato River drainage. Individuals were captured by hand from 18:00 to 22:00 hr, using tuna as bait to attract individuals to three capturing stations located across the study site. All captured individuals were properly identified, measured (carapace length [CL] and plastron length [PL]), weighed (g), marked as part of a mark-recapture study of the population, and released (Figure 2). Specimens of *K. dunni* were clearly recognized by their posteriorly notched plastron and narrow plastral lobes (Figure 3).

We recorded the species in two new localities during the field survey. In the first locality, Corregimiento Samurindó, Municipio del Atrato, Chocó (5°36'27" N, 76°38'25" W, WGS84, 35 m) (Figure 1), one individual was captured near the road after a rainfall event. The specimen was a male (CL = 141.9 mm, PL = 112.2 mm), which was collected and deposited in the Colección Científica de Referencia Zoológica del Chocó-Herpetología (COLZOOCH-H 0064) managed by the Grupo de Investigaciones en Herpetología de la Universidad Tecnológica del Chocó. The second locality, Corregimiento de San Isidro, Municipio Rio Quito, Chocó (5°37'31" N, 76°44'52" W, WGS84, 35 m), is beside the Quito River, which drains into the Atrato River (Figure 1). At this locality 17 specimens (seven males; nine

Figure 2. Adult male of *Kinosternon dunni* captured and released during this study. Photo by: German Forero-Medina

females; one juvenile) were captured and released during three sampling nights, except for one specimen that was collected (CL 146.1 mm, PL 124.1 mm) and deposited in the Colección Científica de Referencia Zoológica del Chocó-Herpetología (COLZOOCH-H 1013). All 17 individuals from San Isidro were captured in a marshy area dominated by palm trees of the genus *Euterpe*, less than 1,5 m deep. Animals were active at night, particularly from 18:00 to 21:00. Sympatric species at this locality were the white-lipped mud turtle *K. leucostomum* and the Colombian wood turtle *Rhinoclemmys melanosterna* Gray, 1861.

A third new locality corresponds to a specimen that is deposited in the museum of the Instituto Alexander von Humboldt in Villa de Leyva, Boyacá (IAVH 3715), and was identified by the authors during a recent visit to this museum (Figure 4). This individual had been classified

Figure 3. Ventral view of a male *Kinosternon dunni* showing the reduced plastral lobes. Photo by: German Forero-Medina.

Figure 4. Specimen from the museum of the Instituto Alexander von Humboldt (IAVH 3715). Photo by: Mario F. Garcés-Restrepo.

as *K. leucostomum*, but under close inspection, it clearly corresponded to a female of *Kinosternon dunni* (CL = 115.4 mm, PL = 94.0 mm) as evidenced by the reduced plastral lobes (Figure 4). The locality for this specimen is Vereda la Playona, Acandí, Chocó (8° 28' 13.64" N, 77° 15' 02.77" W, WGS84, 30 m). It was collected in 1988 in a marshy area near the beach, within the floodplain of the Chugandi and Rionegro rivers, in an area used to grow rice, where natural vegetation had been completely cleared.

The San Juan and Baudó River drainages, where the previous known localities of *K. dunni* occur, drain into the Pacific Ocean (Figure 1). However, the new records from the field survey are all in the Atrato River drainage, which flows into the Caribbean Sea, and for which there were no previous records (Figure 1). The locality corresponding to the museum specimen is located in a small drainage, 367.4 km to the north of the closest previous record (Figure 1). The presence of the species in this new region suggests that its distribution extends north into the middle and lower Atrato River. Additional surveys are urgently needed to determine the northern limit of the species distribution and confirm the presence of populations in the locality where the museum specimen was collected (Gulf of Urabá). This could also help to understand the biogeographic history of the species. Finally, it is important also to conduct genetic and morphological analyses of the species across its range, as other kinosternids can present geographic variation across drainage basins (Iverson 1985; Iverson *et al.* in press).

Acknowledgments: We thank the Turtle Survival Alliance (TSA) for funding the fieldwork, and the Grupo de Herpetologia de la Universidad Tecnológica del Chocó for logistic support. We thank Denilson N. Palacios Palacios, Pablo Palacios Rodriguez, Ramon S. Ramirez Valdez and Zuleiny C. Mosquera for help in the field. In addition, we thank the Instituto de Investigación de Recursos Biológicos Alexander von Humboldt for allowing us to examine their collections.

Literature Cited

Castaño-Mora, O.V. 1997. Status of the tortoises and freshwater turtles of Colombia; p. 302–306 *In* J. Van Abbema (ed.). *Proceedings: Conservation, Restoration and Management of Tortoises and Turtles - An International Conference*. New York: New York Turtle and Tortoise Society.

Castaño-Mora, O.V., G. Cárdenas-Arevalo, E.J. Hernández-Ruz and F. Castro-Herrera. 2004. Reptiles en el Chocó biogeográfico; p. 599–631 *In* J.O. Rangel-Ch. (ed.). *Colombia Diversidad Biótica IV: El Chocó Biogeográfico/Costa Pacífica*. Bogotá, Colombia: Universidad Nacional de Colombia.

Castaño-Mora, O.V. and F. Medem. 2002. *Kinosternon dunni*; p. 125 *In* O.V. Castaño Mora (ed.). *Libro Rojo de Reptiles de Colombia*. Bogotá, Colombia: Instituto de Ciencias Naturales-Universidad Nacional de Colombia, Ministerio del Medio Ambiente, and Conservación Internacional-Colombia.

IUCN 2011. *IUCN Red List of Threatened Species. Version 2011.2.* Electronic Database accessible at http://www.iucnredlist.org/. Captured on 03 January 2012.

Iverson, J. B. 1985. Geographic variation in sexual dimorphism in the mud turtle *Kinosternon hirtipes*. *Copeia* 1985(2): 388–393.

Iverson, J.B. 1991. Phylogenetic hypotheses for the evolution of modern kinosternine turtles. *Herpetological Monographs* (5): 1–27.

Iverson, J.B. 1992. *A Revised Checklist with Distribution Maps of the Turtles of the World.* Richmond, Indiana: Privately printed. 363 p.

Iverson, John B., J.L. Carr, O.V. Castaño-Mora, C.A. Galvis-Rizo, L.E. Renteria-Moreno and G. Forero-Medina. *in press*. *Kinosternon dunni* (Schmidt 1947) — Dunn's Mud Turtle, Cabeza de Trozo. *In* A.G.J. Rhodin, P.C.H. Pritchard, P.P. van Dijk, R.A. Saumure, K.A. Buhlmann, J.B. Iverson y R.A. Mittermeier (ed.) *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs.

Medem, F. 1961. Contribuciones al conocimiento sobre la morfología, ecología y distribución geográfica de la tortuga *Kinosternon dunni* K.P. Schmidt. *Novedades Colombianas* (1): 446–476.

Medem, F. 1962. La distribución geográfica y ecología de los Crocodylia y Testudinata en el Departamento del Chocó. *Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales* 11(44): 279–303.

Rueda-Almonacid, J.V., J.L. Carr, R.A. Mittermeier, J.V. Rodríguez-Mahecha, R.B. Mast, R.C. Vogt, A.G.J. Rhodin, J. De La Ossa-Velásquez, J.N. Rueda and C.G. Mittermeier. 2007. *Las Tortugas y los Cocodrilianos de los Países Andinos del Trópico*. Bogotá, Colombia: Editorial Panamericana, Formas e Impresos, Serie de Guías Tropicales de Campo No. 6, Conservación Internacional. 538 p.

Schmidt, K. P. 1947. A new kinosternid turtle from Colombia. *Fieldiana Zoology* 31(13): 109–112.

Received: January 2012
Accepted: Ocotber 2012
Published online: December 2012
Editorial responsibility: Cameron Siler